

## **TRAVERSE CITY LIGHT & POWER**

### **RENEWABLE ENERGY PLAN U-16635**

**JUNE, 2015**

- Based on this Renewable Energy Plan (REP) Traverse City Light & Power (City) will have the required Renewable Energy Credits (RECs) for the REP time period of 2015-2029 thereby complying with PA 295.
- The primary source of RECs is participation in the Michigan Public Power Agency (MPPA) Granger and North American Natural Resources (NANR) Projects. These projects will utilize landfill gas for electric power generation from a variety of locations in Michigan and possibly in neighboring states.
- The City also has a purchase agreement to obtain credits from Heritage's Stoney Corners Wind Farm.
- The City will have excess RECs to sell during various time periods throughout the REP planning period. Selling of RECs represents a source of income to the City which will reduce overall power supply costs. The cost per REC will be determined to a large extent by market forces in the Michigan REC market. This REP assumes the sale of some of the excess RECs keeping the balance in reserve.
- The City will comply with Section 45 of PA 295 which refers to methods of notification to customers charges, if any, for costs associated with its REP.
- The City had a pre-existing policy in place to develop and include renewable energy project costs with their power supply cost recovery, therefore, there are no incremental costs of compliance. If RECs were to be purchased at some point in the future then there would be an incremental cost of RECs for the additional RECs purchased and would be included in a surcharge accordingly.

**TRAVERSE CITY**

GRANGER			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
NET GENERATION	MWH	***	8,082	9,641	9,615	9,615	9,615	9,641	9,615	9,615	9,615	9,641	9,615	9,615	9,615	9,641	9,615
CAPACITY	MW	***	1.024	1.220	1.220	1.220	1.220	1.220	1.220	1.220	1.220	1.220	1.220	1.220	1.220	1.220	1.220
RENEWABLE ENERGY CREDITS																	
BASE GENERATION	RECS		8,082	9,641	9,615	9,615	9,615	9,641	9,615	9,615	9,615	9,641	9,615	9,615	9,615	9,641	9,615
ON-PEAK & MICH INCENT RECS	RECS	***	973	1,224	1,016	1,016	913	916	913	913	913	916	913	913	913	916	913
TOTAL	RECS		9,055	10,865	10,630	10,630	10,528	10,557	10,528	10,528	10,528	10,557	10,528	10,528	10,528	10,557	10,528
GRANGER UNIT COST	\$/ MWh	\$	89.16	91.39	93.67	96.01	98.41	100.87	103.40	105.98	108.63	111.35	114.13	116.98	119.91	122.90	125.98
O & M	\$/ MWh	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADMIN	\$/ MWh	\$	0.62410	0.63970	0.65570	0.67209	0.68889	0.70611	0.72377	0.74186	0.76041	0.77942	0.79890	0.81887	0.83935	0.86033	0.88184
WDS CHARGES	\$/ MWh	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INCREMENTAL UNIT COST	\$/ REC	\$	89.78	92.03	94.33	96.68	99.10	101.58	104.12	106.72	109.39	112.12	114.93	117.80	120.75	123.76	126.86
TOTAL INCREMENTAL COST	\$	\$	725,604.83	887,219.11	906,914.89	929,587.76	952,827.45	979,323.89	1,001,064.34	1,026,090.95	1,051,743.23	1,080,990.33	1,104,987.73	1,132,612.42	1,160,927.73	1,193,211.06	1,219,699.70
WITH PILT	\$	1.04	754,629.02	922,707.87	943,191.48	966,771.27	990,940.55	1,018,496.84	1,041,106.92	1,067,134.59	1,093,812.96	1,124,229.95	1,149,187.24	1,177,916.92	1,207,364.84	1,240,939.51	1,268,487.69
INTERCONNECTION COSTS	\$	***	10,163	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WITH PILT	\$	1.04	10,569	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRANGER ENERGY COST	\$		754,629	922,708	943,191	966,771	990,941	1,018,497	1,041,107	1,067,135	1,093,813	1,124,230	1,149,187	1,177,917	1,207,365	1,240,940	1,268,488
GRANGER INTERCONN COST	\$		10,569	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRANGER TOTAL COST	\$		765,198	922,708	943,191	966,771	990,941	1,018,497	1,041,107	1,067,135	1,093,813	1,124,230	1,149,187	1,177,917	1,207,365	1,240,940	1,268,488
GRANGER TOTAL COST	\$/ MWH	\$	94.68	95.71	98.10	100.55	103.07	105.64	108.28	110.99	113.77	116.61	119.52	122.51	125.58	128.72	131.93

**TRAVERSE CITY**  
OTHER LANDFILL - ALL SITES

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
NETGENERATION	MWH	***	2,402	3,085	3,077	3,077	3,077	3,085	3,077	3,077	3,077	3,085	3,077	3,077	3,077	3,085	3,077
CAPACITY	MW	***	0.390	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650
RENEWABLE ENERGY CREDITS																	
BASE GENERATION	RECS		2,402	3,085	3,077	3,077	3,077	3,085	3,077	3,077	3,077	3,085	3,077	3,077	3,077	3,085	3,077
ON-PEAK & MICH INCENT RECS	RECS	***	228	293	292	292	292	293	292	292	292	293	292	292	292	293	292
TOTAL	RECS		2,631	3,378	3,369	3,369	3,369	3,378	3,369	3,369	3,369	3,378	3,369	3,369	3,369	3,378	3,369
OTHER LANDFILL UNIT COST	\$/ kWh	\$	78.00	79.95	81.95	84.00	86.10	88.25	90.46	92.72	95.04	97.41	99.85	102.34	104.90	107.52	110.21
O & M	\$/ kWh	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADMIN	\$/ kWh	\$	0.55	0.56	0.57	0.59	0.60	0.62	0.63	0.65	0.67	0.68	0.70	0.72	0.73	0.75	0.77
WDS CHARGES	\$/ kWh	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INCREMENTAL UNIT COST	\$/ REC	\$	78.55	80.51	82.52	84.59	86.70	88.87	91.09	93.37	95.70	98.09	100.55	103.06	105.64	108.28	110.98
TOTAL INCREMENTAL COST	\$	\$	188,694.31	248,381.30	253,895.23	260,242.61	266,748.68	274,166.48	280,252.83	287,259.15	294,440.63	302,628.50	309,346.69	317,080.35	325,007.36	334,045.24	341,460.86
WITH PILT	\$	1.04	\$ 196,242.09	\$ 258,316.56	\$ 264,051.04	\$ 270,652.32	\$ 277,418.63	\$ 285,133.14	\$ 291,462.94	\$ 298,749.52	\$ 306,218.25	\$ 314,733.64	\$ 321,720.55	\$ 329,763.57	\$ 338,007.66	\$ 347,407.05	\$ 355,119.29
INTERCONNECTION COSTS	\$	***	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OTHER LANDFILL ENERGY COST	\$		196,242	258,317	264,051	270,652	277,419	285,133	291,463	298,750	306,218	314,734	321,721	329,764	338,008	347,407	355,119
OTHER LANDFILL INTERCONN COST	\$		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHER LANDFILL TOTAL COST	\$		196,242	258,317	264,051	270,652	277,419	285,133	291,463	298,750	306,218	314,734	321,721	329,764	338,008	347,407	355,119
OTHER LANDFILL TOTAL COST	\$ / MWH	\$	81.69	83.73	85.82	87.97	90.17	92.42	94.73	97.10	99.53	102.02	104.57	107.18	109.86	112.61	115.42

**TRAVERSE CITY**  
HERITAGE STONEY CORNERS WIND FARM

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
NETGENERATION	MWH	***	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
CAPACITY	MW	***	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
RENEWABLE ENERGY CREDITS																	
BASE GENERATION	RECS		27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
ON-PEAK & MICH INCENT RECS	RECS	***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	RECS		27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
STONEY CORNERS UNIT COST	\$/ MWh	(a)	\$ 113.63	\$ 115.90	\$ 118.22	\$ 120.58	\$ 122.99	\$ 125.45	\$ 127.96	\$ 130.52	\$ 133.13	\$ 135.80	\$ 138.51	\$ 141.28	\$ 144.11	\$ 146.99	\$ 149.93
O & M	\$/ MWh		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ADMIN	\$/ MWh		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WDS CHARGES	\$/ MWh		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
INCREMENTAL UNIT COST	\$/ REC		\$ 113.63	\$ 115.90	\$ 118.22	\$ 120.58	\$ 122.99	\$ 125.45	\$ 127.96	\$ 130.52	\$ 133.13	\$ 135.80	\$ 138.51	\$ 141.28	\$ 144.11	\$ 146.99	\$ 149.93
TOTAL INCREMENTAL COST	\$		\$ 3,067,956.00	\$ 3,129,315.12	\$ 3,191,901.42	\$ 3,255,739.45	\$ 3,320,854.24	\$ 3,387,271.32	\$ 3,455,016.75	\$ 3,524,117.09	\$ 3,594,599.43	\$ 3,666,491.42	\$ 3,739,821.24	\$ 3,814,617.67	\$ 3,890,910.02	\$ 3,968,728.22	\$ 4,048,102.79
WITH PILT	\$	1.04	\$ 3,190,674.24	\$ 3,254,487.72	\$ 3,319,577.48	\$ 3,385,969.03	\$ 3,453,688.41	\$ 3,522,762.18	\$ 3,593,217.42	\$ 3,665,081.77	\$ 3,738,383.41	\$ 3,813,151.07	\$ 3,889,414.09	\$ 3,967,202.38	\$ 4,046,546.42	\$ 4,127,477.35	\$ 4,210,026.90
INTERCONNECTION COSTS	\$	***	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
STONEY CORNERS ENERGY COST	\$		\$ 3,190,674	\$ 3,254,488	\$ 3,319,577	\$ 3,385,969	\$ 3,453,688	\$ 3,522,762	\$ 3,593,217	\$ 3,665,082	\$ 3,738,383	\$ 3,813,151	\$ 3,889,414	\$ 3,967,202	\$ 4,046,546	\$ 4,127,477	\$ 4,210,027
STONEY CORNERS INTERCONN COST	\$		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
STONEY CORNERS TOTAL COST	\$		\$ 3,190,674	\$ 3,254,488	\$ 3,319,577	\$ 3,385,969	\$ 3,453,688	\$ 3,522,762	\$ 3,593,217	\$ 3,665,082	\$ 3,738,383	\$ 3,813,151	\$ 3,889,414	\$ 3,967,202	\$ 4,046,546	\$ 4,127,477	\$ 4,210,027
STONEY CORNERS TOTAL COST	\$/ MWH		\$ 118.17	\$ 120.54	\$ 122.95	\$ 125.41	\$ 127.91	\$ 130.47	\$ 133.08	\$ 135.74	\$ 138.46	\$ 141.23	\$ 144.05	\$ 146.93	\$ 149.87	\$ 152.87	\$ 155.93

**FOOTNOTES:**

(a) PPA has a fixed cost per MWh

# TRAVERSE CITY

Baseline RECs	Used for Compliance in...			
	2012	2013	2014	2015
778	6,986	11,138	16,545	22,808

LFG Entitlement 8.13%

Total Credits		Yearly Addition		Required		Current Surplus (Deficiency)		Year-End Surplus (Deficiency)		Expired or Sold	
2015	174,476	2015	23,686	2015	32,297	2015	64,102	2015	55,491	2015	-
2016	200,719	2016	26,243	2016	32,297	2016	-	2016	49,437	2016	-
2017	226,718	2017	25,999	2017	32,297	2017	-	2017	43,139	2017	-
2018	252,717	2018	25,999	2018	32,297	2018	-	2018	36,841	2018	-
2019	278,614	2019	25,897	2019	32,297	2019	-	2019	30,441	2019	-
2020	304,549	2020	25,935	2020	32,297	2020	-	2020	24,079	2020	-
2021	335,446	2021	30,897	2021	32,297	2021	-	2021	22,679	2021	-
2022	366,343	2022	30,897	2022	32,297	2022	-	2022	21,279	2022	-
2023	397,240	2023	30,897	2023	32,297	2023	-	2023	19,879	2023	-
2024	428,175	2024	30,935	2024	32,297	2024	-	2024	18,517	2024	-
2025	459,072	2025	30,897	2025	32,297	2025	-	2025	17,117	2025	-
2026	489,969	2026	30,897	2026	32,297	2026	-	2026	15,717	2026	-
2027	520,866	2027	30,897	2027	32,297	2027	-	2027	14,317	2027	-
2028	551,801	2028	30,935	2028	32,297	2028	-	2028	12,955	2028	-
2029	582,698	2029	30,897	2029	32,297	2029	-	2029	11,555	2029	-

2015	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
3-Year Avg Sales													322,971
Baseline RECs													778
Required REC's													32,297
Brent Run #1	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Brent Run West	36	32	36	35	36	35	36	36	35	36	35	36	421
Brent Run #3	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Brent Run #4	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Blanc	238	215	238	231	238	231	238	238	231	238	231	238	2,807
Orchard Hills	208	195	208	201	208	201	208	208	201	208	201	208	2,458
Venice Park	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Purchases/(Sales)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(15,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	<b>1,864</b>	<b>1,787</b>	<b>1,864</b>	<b>1,836</b>	<b>2,055</b>	<b>2,021</b>	<b>2,055</b>	<b>2,055</b>	<b>2,021</b>	<b>2,055</b>	<b>2,021</b>	<b>2,055</b>	<b>23,686</b>
Expired/Sold RECs	-	-	-	-	-	-	-	-	-	-	-	-	-

2016	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
3-Year Avg Sales													322,971
Baseline RECs													778
Required REC's													32,297
Brent Run #1	95	89	95	92	95	92	95	95	92	95	92	95	1,126
Brent Run West	36	33	36	35	36	35	36	36	35	36	35	36	422
Brent Run #3	191	178	191	185	191	185	191	191	185	191	185	191	2,252
Brent Run #4	104	97	104	101	104	101	104	104	101	104	101	104	1,229
Grand Blanc	286	268	286	277	286	277	286	286	277	286	277	286	3,378
Orchard Hills	208	195	208	201	208	201	208	208	201	208	201	208	2,458
Venice Park	286	268	286	277	286	277	286	286	277	286	277	286	3,378
Purchases/(Sales)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(15,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	<b>2,206</b>	<b>2,129</b>	<b>2,206</b>	<b>2,167</b>	<b>2,206</b>	<b>2,167</b>	<b>2,206</b>	<b>2,206</b>	<b>2,167</b>	<b>2,206</b>	<b>2,167</b>	<b>2,206</b>	<b>26,243</b>
Expired/Sold RECs	-	-	-	-	-	-	-	-	-	-	-	-	-

2017	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
3-Year Avg Sales													322,971
Baseline RECs													778
Required REC's													32,297
Brent Run #1	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Brent Run West	36	32	36	35	36	35	36	36	35	36	35	36	421
Brent Run #3	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Brent Run #4	104	94	104	101	104	101	104	104	101	104	101	104	1,226
Grand Blanc	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Orchard Hills	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Venice Park	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Purchases/(Sales)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(15,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	<b>2,189</b>	<b>2,074</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>25,999</b>
Expired/Sold RECs	-	-	-	-	-	-	-	-	-	-	-	-	-

2018	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
3-Year Avg Sales													322,971
Baseline RECs													778
Required REC's													32,297
Brent Run #1	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Brent Run West	36	32	36	35	36	35	36	36	35	36	35	36	421
Brent Run #3	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Brent Run #4	104	94	104	101	104	101	104	104	101	104	101	104	1,226
Grand Blanc	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Orchard Hills	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Venice Park	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Purchases/(Sales)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(1,250)	(15,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	<b>2,189</b>	<b>2,074</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>2,151</b>	<b>2,189</b>	<b>25,999</b>
Expired/Sold RECs	-	-	-	-	-	-	-	-	-	-	-	-	-

2019	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
3-Year Avg Sales													322,971
Baseline RECs													778
Required REC's													32,297
Brent Run #1	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Brent Run West	36	32	36	35	36	35	36	36	35	36	35	36	421
Brent Run #3	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Brent Run #4	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Grand Blanc	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Orchard Hills	191	172	191	185	191	185	191	191	185	191	185	191	2,246



<b>Current Vintage</b>	2,597	2,483	2,597	2,559	2,597	2,559	2,597	2,597	2,559	2,597	2,559	2,597	<b>30,897</b>
<b>Expired/Sold RECs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-

2026	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
<b>3-Year Avg Sales</b>													322,971
<b>Baseline RECs</b>													778
<b>Required REC's</b>													32,297
Brent Run #1	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Brent Run West	36	32	36	35	36	35	36	36	35	36	35	36	421
Brent Run #3	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Brent Run #4	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Grand Blanc	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Orchard Hills	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Venice Park	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Purchases/(Sales)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(10,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	2,597	2,483	2,597	2,559	2,597	2,559	2,597	2,597	2,559	2,597	2,559	2,597	<b>30,897</b>
<b>Expired/Sold RECs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-

2027	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
<b>3-Year Avg Sales</b>													322,971
<b>Baseline RECs</b>													778
<b>Required REC's</b>													32,297
Brent Run #1	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Brent Run West	36	32	36	35	36	35	36	36	35	36	35	36	421
Brent Run #3	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Brent Run #4	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Grand Blanc	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Orchard Hills	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Venice Park	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Purchases/(Sales)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(10,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	2,597	2,483	2,597	2,559	2,597	2,559	2,597	2,597	2,559	2,597	2,559	2,597	<b>30,897</b>
<b>Expired/Sold RECs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-

2028	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
<b>3-Year Avg Sales</b>													322,971
<b>Baseline RECs</b>													778
<b>Required REC's</b>													32,297
Brent Run #1	95	89	95	92	95	92	95	95	92	95	92	95	1,126
Brent Run West	36	33	36	35	36	35	36	36	35	36	35	36	422
Brent Run #3	191	178	191	185	191	185	191	191	185	191	185	191	2,252
Brent Run #4	95	89	95	92	95	92	95	95	92	95	92	95	1,126
Grand Blanc	286	268	286	277	286	277	286	286	277	286	277	286	3,378
Orchard Hills	191	178	191	185	191	185	191	191	185	191	185	191	2,252
Venice Park	286	268	286	277	286	277	286	286	277	286	277	286	3,378
Purchases/(Sales)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(10,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	2,597	2,521	2,597	2,559	2,597	2,559	2,597	2,597	2,559	2,597	2,559	2,597	<b>30,935</b>
<b>Expired/Sold RECs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-

2029	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total
<b>3-Year Avg Sales</b>													322,971
<b>Baseline RECs</b>													778
<b>Required REC's</b>													32,297
Brent Run #1	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Brent Run West	36	32	36	35	36	35	36	36	35	36	35	36	421
Brent Run #3	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Brent Run #4	95	86	95	92	95	92	95	95	92	95	92	95	1,123
Grand Blanc	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Orchard Hills	191	172	191	185	191	185	191	191	185	191	185	191	2,246
Venice Park	286	258	286	277	286	277	286	286	277	286	277	286	3,369
Purchases/(Sales)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(833)	(10,000)
Stoney Corners	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	27,000
<b>Current Vintage</b>	2,597	2,483	2,597	2,559	2,597	2,559	2,597	2,597	2,559	2,597	2,559	2,597	<b>30,897</b>
<b>Expired/Sold RECs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-

TRAVERSE CITY

ITEM	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Sales Forecast - 3 yr running average	MWH	322,971															
10% Compliance Factor		0.10															
RPS Requirement	MWH	32,297															
RECS - RPS Required	RECS	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	
RECS - PRE-REP (BASELINE)	RECS	778	778	778	778	778	778	778	778	778	778	778	778	778	778	778	
RECS - Incremental Difference	RECS	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	
FACTOR		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Required New RECS	RECS	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	31,519	
<b>RPS RENEWABLE ENERGY CREDIT COMPLIANCE</b>																	
RECS CARRIED OVER	RECS	64,102	55,491	49,437	43,139	36,841	30,441	24,079	22,679	21,279	19,879	18,517	17,117	15,717	14,317	12,955	
RECS OBTAINED (NEW)	RECS	38,686	41,243	40,999	40,999	40,897	40,935	40,897	40,897	40,897	40,935	40,897	40,897	40,897	40,935	40,897	
RECS OBTAINED (BASELINE PLUS DIFFERENTIAL, IF ANY)	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
REC PURCHASES / (SALES) FROM OTHER SOURCES	RECS	(15,000)	(15,000)	(15,000)	(15,000)	(15,000)	(15,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	
TOTAL RECS SOURCES		87,788	81,734	75,436	69,138	62,738	56,376	54,976	53,576	52,176	50,814	49,414	48,014	46,614	45,252	43,852	
REQUIRED RECS (BASELINE PLUS NEW)	RECS	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	
RECS USED FOR COMPLIANCE	RECS	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	32,297	
EXPIRED RECS	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RECS CUMULATIVE BALANCE	RECS	55,491	49,437	43,139	36,841	30,441	24,079	22,679	21,279	19,879	18,517	17,117	15,717	14,317	12,955	11,555	
Incremental Compliance with New RECS	%	123%	131%	130%	130%	130%	130%	130%	130%	130%	130%	130%	130%	130%	130%	130%	
Compliance % with Cumulative REC Balance	%	272%	253%	234%	214%	194%	175%	170%	166%	162%	157%	153%	149%	144%	140%	136%	
<b>Revenue Requirements for New Renewables</b>																	
Build (see project sheets for information)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
PPA	\$	961,440	1,181,024	1,207,243	1,237,424	1,268,359	1,303,630	1,332,570	1,365,884	1,400,031	1,438,964	1,470,908	1,507,680	1,545,372	1,588,347	1,623,607	
REC Purchases (Sales)	\$	(16,500)	(16,913)	(17,335)	(17,769)	(18,213)	(18,668)	(12,757)	(13,076)	(13,402)	(13,737)	(14,081)	(14,433)	(14,794)	(15,164)	(15,543)	
Total	\$	944,940	1,164,112	1,189,907	1,219,655	1,250,146	1,284,962	1,319,813	1,352,809	1,386,629	1,425,226	1,456,827	1,493,248	1,530,579	1,573,183	1,608,064	
<b>RECs Obtained</b>																	
Generation Based																	
Build (see project sheets for information)	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PPA	RECS	37,484	39,726	39,691	39,691	39,691	39,726	39,691	39,691	39,691	39,726	39,691	39,691	39,691	39,726	39,691	
Subtotal	RECS	37,484	39,726	39,691	39,691	39,691	39,726	39,691	39,691	39,691	39,726	39,691	39,691	39,691	39,726	39,691	
Purchase (Sold) From New RECS	RECS	(15,000)	(15,000)	(15,000)	(15,000)	(15,000)	(15,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	
Incentive (SB 213 Sec 39 (2))	RECS	1,201	1,517	1,308	1,308	1,205	1,209	1,205	1,205	1,205	1,209	1,205	1,205	1,205	1,209	1,205	
Total	RECS	23,686	26,243	25,999	25,999	25,897	25,935	30,897	30,897	30,897	30,935	30,897	30,897	30,897	30,935	30,897	
Forecasted Transfer Price per MWH	\$/MWH	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Amount recovered through PSCR	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Transfer price x volume of energy (see INCR COST sheet)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Incremental Cost of Compliance (see INCR COST sheet)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Additional investment above PA 295 requirements	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
<b>Non-Volumetric Surcharge</b>																	
Meter (or customer) Forecast (Number)																	
Residential	No.	9,480	9,547	9,623	9,708	9,799	9,896	9,997	10,102	10,210	10,320	10,432	10,546	10,661	10,776	10,892	
Commercial	No.	3,125	3,147	3,172	3,200	3,230	3,262	3,295	3,330	3,365	3,402	3,439	3,476	3,514	3,552	3,590	
Industrial	No.	42	42	42	43	43	44	44	44	45	45	46	46	47	47	48	
Streetlights	No.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Unmetered	No.	344	344	344	344	344	344	344	344	344	344	344	344	344	344	344	
Total	No.	12,991	13,080	13,182	13,295	13,416	13,545	13,681	13,820	13,964	14,112	14,261	14,412	14,565	14,719	14,874	
<b>Maximum Surcharge (all rate classes at caps)</b>																	
Residential	\$	3.00	341,290	343,689	346,437	349,483	352,769	356,255	359,900	363,676	367,560	371,531	375,566	379,653	383,779	387,930	392,098
Commercial	\$	16.58	621,735	626,107	631,113	636,661	642,648	648,998	655,639	662,518	669,592	676,827	684,178	691,622	699,140	706,701	714,294
Industrial	\$	187.50	93,832	94,491	95,247	96,084	96,988	97,946	98,948	99,987	101,054	102,146	103,255	104,379	105,513	106,655	107,800
Streetlights	\$	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Unmetered	\$	0.60	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477	
Total	\$	1,059,333	1,066,764	1,075,274	1,084,705	1,094,882	1,105,676	1,116,964	1,128,658	1,140,683	1,152,981	1,165,476	1,178,131	1,190,909	1,203,763	1,216,668	
<b>Planned Surcharge</b>																	
Residential	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Commercial	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Industrial	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Streetlights	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Unmetered	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	